

**AMENDMENTS TO THE CLAIMS**

1. (Canceled) A resid fuel additive for reducing a pollutant emission, the additive comprising: a plant oil extract; an antioxidant; and a thermal stabilizer.
2. (Canceled) The resid fuel additive of claim 1, wherein the plant oil extract comprises an oil extract of a plant of the Leguminosae family.
3. (Canceled) The resid fuel additive of claim 1, wherein the plant oil extract is selected from the group consisting of oil extract of vetch and oil extract of barley.
4. (Canceled) The resid fuel additive of claim 1, wherein the plant oil extract comprises chlorophyll.
5. (Canceled) The resid fuel additive of claim 1, wherein the antioxidant comprises  $\beta$ -carotene.
6. (Canceled) The resid fuel additive of claim 1, wherein the thermal stabilizer comprises jojoba oil.
7. (Canceled) The resid fuel additive of claim 1, wherein the thermal stabilizer comprises an ester of a C20-C22 straight chain monounsaturated carboxylic acid.
8. (Canceled) The resid fuel additive of claim 1, wherein the plant oil extract comprises oil extract of vetch, wherein the antioxidant comprises  $\beta$ -carotene, and wherein the thermal stabilizer comprises jojoba oil.
9. (Canceled) The resid fuel additive of claim 1, further comprising a diluent.

10. (Canceled) The resid fuel additive of claim 9, wherein the diluent is selected from the group consisting of toluene, resid fuel additive, resid fuel, jet fuel, and mixtures thereof.
11. (Canceled) The resid fuel additive of claim 1, further comprising an oxygenate.
12. (Canceled) The resid fuel additive of claim 11, wherein the oxygenate is selected from the group consisting of methanol, ethanol, methyl tertiary butyl ether, ethyl tertiary butyl ether, and tertiary amyl methyl-ether, and mixtures thereof.
13. (Canceled) The resid fuel additive of claim 1, further comprising at least one additional additive selected from the group consisting of cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, antiwear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, and mixtures thereof.
14. (Canceled) The resid fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is from about 0.25:1 to about 2:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is from about 0.5:1 to about 2:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is from about 0.5:1 to 2:1.
15. (Canceled) The resid fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is from about 0.3:1 to about 0.9:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is from about 0.3:1 to about 0.9:1, and wherein a ratio of milliliters

jojoba oil to grams of  $\beta$ -carotene in the additive is about 0.5:1 to about 1.5:1.

16. (Canceled) The resid fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 0.6:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 0.6:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 1:1.
17. (Canceled) The resid fuel additive of claim 1, wherein the resid fuel additive comprises a High Residual fuel additive.
18. (Canceled) The resid fuel additive of claim 1, wherein the resid fuel additive comprises a Bunker C fuel additive.
19. (Canceled) The resid fuel additive of claim 8, wherein the additive comprises about 8 ml jojoba oil per 3785 ml of the additive, about 4 g  $\beta$ -carotene per 3785 ml of the additive, and about 19.36 g oil extract of vetch per 3785 ml of the additive.
20. (Canceled) The resid fuel additive of claim 8, wherein the additive comprises about 32 ml jojoba oil per 3785 ml of the additive, about 32 g  $\beta$ -carotene per 3785 ml of the additive, and about 155 g oil extract of vetch per 3785 ml of the additive.
21. (Canceled) A resid fuel additive for reducing a pollutant emission, the additive comprising: an antioxidant; and a thermal stabilizer.
22. (Canceled) The resid fuel additive of claim 21, wherein the antioxidant comprises  $\beta$ -carotene.
23. (Canceled) The resid fuel additive of claim 21, wherein the thermal stabilizer comprises jojoba oil.

24. (Canceled) The resid fuel additive of claim 21, wherein the thermal stabilizer comprises an ester of a C20-C22 straight chain monounsaturated carboxylic acid.
25. (Canceled) The resid fuel additive of claim 21, further comprising a plant oil extract.
26. (Canceled) The resid fuel additive of claim 25, wherein the plant oil extract comprises an oil extract of a plant of the Leguminosae family.
27. (Canceled) The resid fuel additive of claim 25, wherein the plant oil extract is selected from the group consisting of oil extract of vetch and oil extract of barley.
28. (Canceled) The resid fuel additive of claim 25, wherein the plant oil extract comprises chlorophyll.
29. (Canceled) The resid fuel additive of claim 21, wherein the antioxidant comprises  $\beta$ -carotene.
30. (Canceled) The resid fuel additive of claim 21, wherein the thermal stabilizer comprises jojoba oil.
31. (Canceled) The resid fuel additive of claim 21, wherein the antioxidant comprises  $\beta$ -carotene, the thermal stabilizer comprises jojoba oil, and wherein the additive comprises about 4 ml jojoba oil per 3785 ml of the additive and about 4 g  $\beta$ -carotene per 3785 ml of the additive.
32. (Canceled) The resid fuel additive of claim 21, wherein the antioxidant comprises  $\beta$ -carotene and the thermal stabilizer comprises jojoba oil, and wherein the additive comprises about 32 ml jojoba oil per 3785 ml of the additive and about 32 g  $\beta$ -carotene per 3785 ml of the additive.

33. (Canceled) The resid fuel additive of claim 21, wherein the antioxidant comprises  $\beta$ -carotene and wherein the thermal stabilizer comprises jojoba oil.
34. (Canceled) The resid fuel additive of claim 30, wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is from about 0.5:1 to 2:1.
35. (Canceled) The resid fuel additive of claim 30, wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 0.5:1 to about 1.5:1.
36. (Canceled) The resid fuel additive of claim 30, wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 1:1.
37. (Previously presented) A resid fuel additive comprising
  - a plant oil extract derived from grain;
  - a carotenoid; and
  - a thermal stabilizer.
38. (Previously presented) The additive of claim 37, wherein the grain is selected from the group consisting of fescue, clover, wheat, barley, oats, rye, sorghum, flax, triticale, rice, corn, spelt, millet, amaranth, buckwheat, quinoa, kamut and teff.
39. (Previously presented) The additive of claim 37 wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
40. (Previously presented) The additive of claim 37, wherein the thermal stabilizer is selected from the group consisting of vegetable oils, nut oils, animal oils and mixtures thereof

41. (Previously presented) The additive of claim 37 wherein the plant oil extract is derived from barley and the carotenoid is  $\beta$ -carotene.
42. (Previously presented) The additive of claim 37 wherein the thermal stabilizer is meadowfoam oil.
43. (Previously presented) The additive of claim 37 further comprising a diluent.
44. (Amended) The additive of claim 37 further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, resid fuel, jet fuel, resid fuel, 2 cycle oil, resid fuel and mixtures thereof.
45. (Previously presented) The additive of claim 37 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.
46. (Amended) A resid fuel additive comprising:
  - a hydrophobic plant oil extract;
  - a carotenoid; and
  - a thermal stabilizer selected from the group consisting of peanut oil, cottonseed oil, rape seed oil, macadamia oil, avocado oil, palm oil, palm kernel oil, meadowfoam oil and mixtures thereof.
47. (Previously presented) The additive of claim 46 wherein the plant oil extract is derived from a member of the Leguminosae family.

48. (Previously presented) The additive of claim 46 wherein the plant oil extract is derived from grain.
49. (Previously presented) The additive of claim 46 further comprising a diluent.
50. (Previously presented) The additive of claim 46 further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, resid fuel, jet fuel, resid fuel, 2 cycle oil, resid fuel and mixtures thereof.
51. (Previously presented) The additive of claim 46 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.
52. (Previously presented) The additive of claim 46, wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
53. (Previously presented) The additive of claim 46 wherein the plant oil extract is barley oil extract, and the carotenoid is  $\beta$ -carotene.
54. (Previously presented) The additive of claim 46 further comprising meadowfoam oil.
55. (Previously presented) A resid fuel additive comprising;

a plant oil extract selected from the group consisting of hops oil extract, fescue oil extract, barley oil extract, green clover oil extract, wheat oil extract and mixtures thereof;

a carotenoid; and

a thermal stabilizer.

56. (Previously presented) The additive of claim 55 wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
57. (Previously presented) The additive of claim 55, wherein the thermal stabilizer is selected from the group consisting of vegetable oils, nut oils, animal oils and mixtures thereof
58. (Previously presented) The additive of claim 55 wherein the plant oil extract is derived from barley and the carotenoid is  $\beta$ -carotene.
59. (Previously presented) The additive of claim 55 wherein the thermal stabilizer is meadowfoam oil.
60. (Previously presented) The additive of claim 55 further comprising a diluent.
61. (Amended) The additive of claim 55 further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, resid fuel, jet fuel, resid fuel, 2 cycle oil, resid fuel and mixtures thereof.
62. (Previously presented) The additive of claim 55 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants,

demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.

63. (Canceled) The additive of claim 55 wherein the plant oil extract is barley oil extract, and the carotenoid is  $\beta$ -carotene.
64. (Previously presented) A resid fuel comprising a base fuel and at least one additive wherein the additive comprises:
  - a plant oil extract derived from grain;
  - a carotenoid; and
  - a thermal stabilizer.
65. (Previously presented) The resid fuel of claim 64, wherein the grain is selected from the group consisting of fescue, clover, wheat, barley, oats, rye, sorghum, flax, triticale, rice, corn, spelt, millet, amaranth, buckwheat, quinoa, kamut and teff.
66. (Previously presented) The resid fuel of claim 64 wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
67. (Previously presented) The resid fuel of claim 64, wherein the thermal stabilizer is selected from the group consisting of vegetable oils, nut oils, animal oils and mixtures thereof.
68. (Previously presented) The resid fuel of claim 64 wherein the plant oil extract is derived from barley and the carotenoid is  $\beta$ -carotene.
69. (Previously presented) The resid fuel of claim 64 wherein the thermal stabilizer is meadowfoam oil.

70. (Previously presented) The resid fuel of claim 64 further comprising a diluent.
71. (Amended) The resid fuel of claim 64 further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, resid fuel, jet fuel, resid fuel, 2 cycle oil and resid fuel and mixtures thereof.
72. (Previously presented) The resid fuel of claim 64 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.
73. (Previously presented) The resid fuel of claim 64 wherein the plant oil extract is barley oil extract, the carotenoid is  $\beta$ -carotene.
74. (Amended) A resid fuel comprising a base fuel and at least one additive wherein the additive comprises:
- a hydrophobic plant oil extract;
  - a carotenoid; and
  - a thermal stabilizer selected from the group consisting of peanut oil, cottonseed oil, rape seed oil, macadamia oil, avocado oil, palm oil, palm kernel oil, meadowfoam oil, and mixtures thereof.

75. (Previously presented) The resid fuel of claim 74 wherein the plant oil extract is derived from a member of the Leguminosae family.
76. (Previously presented) The resid fuel of claim 74 wherein the plant oil extract is derived from grain.
77. (Previously presented) The resid fuel of claim 74 further comprising a diluent.
78. (Amended) The resid fuel of claim 74 further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, resid fuel, jet fuel, resid fuel, 2 cycle oil and resid fuel and mixtures thereof.
79. (Previously presented) The resid fuel of claim 74 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.
80. (Previously presented) The resid fuel of claim 74, wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
81. (Previously presented) The resid fuel of claim 74 wherein the plant oil extract is barley oil extract, the carotenoid is  $\beta$ -carotene.
82. (Amended) A resid fuel comprising a base feed and at least one additive wherein the additive comprises:

a plant oil extract selected from the group consisting of hops oil extract, fescue oil extract, barley oil extract, green clover oil extract, wheat oil extract and mixtures thereof;

a carotenoid; and

a thermal stabilizer.

83. (Previously presented) The resid fuel of claim 82 wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
84. (Previously presented) The resid fuel of claim 82, wherein the thermal stabilizer is selected from the group consisting of vegetable oils, nut oils, animal oils and mixtures thereof
85. (Previously presented) The resid fuel of claim 82 wherein the plant oil extract is derived from barley and the carotenoid is  $\beta$ -carotene.
86. (Previously presented) The resid fuel of claim 82 wherein the thermal stabilizer is meadowfoam oil.
87. (Previously presented) The resid fuel of claim 82 further comprising a diluent.
88. (Amended) The resid fuel of claim 82 further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, resid fuel, jet fuel, resid fuel, 2 cycle oil and resid fuel and mixtures thereof.
89. (Previously presented) The resid fuel of claim 88 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants,

anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.

90. (Canceled) The resid fuel of claim 82 wherein the plant oil extract is barley oil extract, the carotenoid is  $\beta$ -carotene.